Updated Breastfeeding Residency Curriculum
Evaluation Questions

Medical Knowledge

1. When the newborn begins to suckle from the breast, this stimulates the release of hormones in the mother's brain. The hormone primarily responsible for milk ejection ("let-down") is:
   A. Estrogen
   B. Progesterone
   C. Prolactin
   D. Oxytocin
   E. Transferrin

Rationale:
Oxytocin (D) is secreted by the posterior pituitary and travels via the bloodstream to stimulate contraction of the myoepithelial cells to cause milk ejection, making breast milk more available to the breastfeeding infant. Prolactin is a primary hormone secreted by the anterior pituitary which stimulates the alveolar cells to produce milk.

2. Exclusive breastfeeding is recommended for about what length of time?
   A. 1 month
   B. 2 months
   C. 4 months
   D. 6 months
   E. 9 months

Rationale:
The American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, and the American Academy of Family Physicians all recommend that infants be breastfed exclusively for the first 6 months of life.

3. Breastfeeding is contraindicated in which of the following conditions:
   A. Infants with galactosemia
   B. Maternal hepatitis B
   C. Maternal hepatitis C
   D. Maternal mastitis
   E. Infants with cystic fibrosis

Rationale:
A is the best response. Human milk contains lactose (glucose + galactose), and galactose can not be metabolized by infants with the classic form of galactosemia, one of the few infant conditions that preclude breastfeeding or feeding of human milk. Infants of mothers with hepatitis B should receive hepatitis B vaccine and hepatitis B immune globulin after birth. There is no increased transmission of hepatitis C with breastfeeding, unless nipples are cracked and

bleeding. The milk of mothers with mastitis is safe for the baby. Infants with cystic fibrosis may need supplemental enzymes, but breastfeeding is encouraged.

4. Milk production is increased by:
   A. More frequent milk removal
   B. Forcing maternal fluid ingestion
   C. Increasing maternal caloric intake
   D. Maternal supplementation with vitamin D
   E. Hearing an infant cry

Rationale:
The more stimulation the breasts receive through frequent and thorough milk removal, the more milk will be produced. Forcing fluids has no positive effect on milk supply. Increasing caloric intake may improve the mother's energy level but will not impact milk volume in most cases. Vitamin D intake has no effect on milk volume. Hearing an infant cry may trigger a milk ejection reflex, or "let-down" of the milk, but does not increase the volume of milk produced.

5. The addition of complementary foods is recommended at about:
   A. 2 months
   B. 4 months
   C. 6 months
   D. 9 months
   E. 12 months

Rationale:
Breast milk alone maintains adequate nutrition and growth up to **6 months** of age in most healthy, term infants. Most infants can sit with minimal support and have developed the oral motor feeding skills to move a pureed texture from the front of the tongue to the back and swallow. Before this time, the tongue extrusion reflux causes the infant to spit out pureed foods.

6. All of the following are correct about cracked nipples, **except:**
   A. A shallow latch could contribute to this type of trauma.
   B. **Most mothers should expect to get cracked nipples.**
   C. NSAIDs can be given to lactating mothers which will help with pain.
   D. Tongue motion can cause nipple abrasions.

Rationale:
Cracked nipples are a sign of a problem with latch. If the latch is not corrected, the cracking can persist or worsen. A shallow latch can contribute to sore or cracked nipples. The infant should be deeply latched with as much of the areola in the mouth as possible. The infant should not be sucking on the tip of the nipple. If the tip of the infant's tongue is pushing against the nipple, instead of cupped around nipple and areola, this can also cause a nipple abrasion. Some mild nipple tenderness or tugging sensation occurs when the infant first begins a feeding in the early days. This should not last throughout the feeding. If it does, the baby should be removed from

the breast and relatched. Non-steroidal anti-inflammatory medications are safe to use for mothers experiencing pain.

Patient Care

1. On the day after delivery, a breastfeeding mother reports that she is having difficulty getting her infant to breastfeed. Your best response to this situation would be to:

A. Explain that most babies have a difficult time starting out and to just keep trying
B. Advise that the baby may be getting dehydrated, so he is not interested in feeding
C. Encourage supplementation with infant formula until the baby learns to breastfeed
D. Discharge the infant, so the mother will be more relaxed breastfeeding at home
E. Request assistance for the mother at the infant's next feeding to evaluate the breastfeeding technique

Rationale:
The best response is E. Reassurance without observation and investigation may lead to a dehydrated, jaundiced baby and a frustrated, engorged mother. Formula supplementation without a valid indication and plan may sabotage the supply and demand nature of milk production breastfeeding. A trained lactation specialist should be consulted to assist the mother with latching the baby and monitor for an effective suckling pattern. All newborns should demonstrate successful feeding prior to hospital discharge.

2. A 4 day old comes to your office for his newborn follow-up visit. He was the first child born to a 28 year old G1 mother at 38 weeks gestational age by spontaneous vaginal delivery weighing 3400 grams. He was able to go skin-to-skin after delivery and latch within the first hour. The mother noted some pain with latching in the hospital and was discharged home with continued and exclusive direct breastfeeding. At your office, the mother reports that the newborn is crying frequently despite being fed every 2-3 hours on both breasts. He is having 4 wet diapers and 1 black, tarry stool per day. Mother complains that her nipples are very tender and sometimes bleed. Her breasts are starting to feel fuller and more painful. The baby now weighs 2950 grams.

How should you assist this mother and newborn in your office?

A. Give the baby a bottle of formula because he is obviously hungry and has lost too much weight.
B. Babies often cry in the early days, so tell the parents he just needs to be cuddled and held close to a parent's heartbeat.
C. Tell the family that the weight loss in the newborn period is expected and to follow up at 1 month.
D. Examine the mother's breasts, and assess the baby's suckle while breastfeeding, helping the mother to attain a deep and asymmetric latch.

Rationale:
A. A is incorrect because the mother may actually have her own milk that she can provide for the baby. Breastfeeding should be assessed.

B. B is incorrect because the newborn in this scenario is likely crying from hunger. Cuddling and holding next to the parents' heart, especially while skin-to-skin can calm a fussy baby, but feeding cues must be addressed.
C. C is incorrect because the weight loss in this scenario is >13%. Typical newborn weight loss is ~7% and sometimes higher after Cesarean delivery. (See newborn weight loss tool NEWT www.newbornweight.org) If you are able to help with an adequate latch, and document milk transfer, the newborn will need a weight check in a few days to document gain. A one month recheck is much too long to wait to see baby again.
D. D is correct. The signs and symptoms described for mother and baby relate to a shallow latch, which interferes with milk transfer as milk is described as coming to volume in this scenario, and the shallow latch also creates nipple trauma. Improved latch technique will help both mom and baby. A pump at this juncture may help if baby cannot latch correctly to remove milk, or if mom is getting engorged. You will determine after the feeding session whether some supplementation is needed for a short time, with a weight check in 1-2 days to assess progress. You can consider a pre- and post-weight check to see how much milk is transferred during a feeding.

3. A one-week old term infant presents to the primary care clinic for a weight check. The mother is a first-time exclusively breastfeeding mother, and wants to know whether her baby is getting enough milk. Which of the following would be most reassuring regarding adequate intake in a breastfeeding infant during the first week of life?

A. Once-daily soft stools
B. More than 13% weight loss by day 8
C. Less than 7% weight loss by day 7
D. Once-daily copious urine

Rationale:

A. **A** is incorrect because stooling patterns alone are not used to gauge how well breastfeeding is going. Breastfeeding infants may stool once after each meal, once daily, or once every few days per their own pattern. After the first few days, many breastfeeding newborns will stool after every feeding.
B. **B** is incorrect because more than 13% weight loss in the first week of life should result in prompt return to the pediatrician's office and investigation into why the newborn is not gaining weight.
C. **C** is **correct**. Infants rarely exceed birthweight in the first week of life when exclusively breastfed. If weight loss is less than 10% in the first week of life and the weight trend shows gradually increasing weight, breastfeeding is going well and the newborn is following a normal trajectory.
D. **D** is incorrect because once-daily urine output is insufficient. A newborn is expected to urinate multiple times daily in the first week of life. The number of wet diapers should increase daily from about 1-2 on day of birth, by 1 wet diaper daily to a plateau of about 6-8 wet diapers daily by day 7 of life. Insufficient urine output may indicate inadequate breast milk intake.

4. A term infant is born to a mother who has been stable in a methadone treatment program for the past 5 years. Her routine serologies, including HIV, Hep B, and Hep C, were negative at the beginning of her pregnancy. She wants to know whether she can breastfeed her baby while continuing to take daily doses of methadone.

A. No, this mother is at risk of contracting blood-borne illnesses and should not breastfeed due to the risk of transmitting them to her baby.
B. No, methadone can be transmitted to the baby via the breastmilk and risks causing respiratory depression in the baby.
C. Depends, if the mother is taking <20 mg/day of methadone then it is safe to breastfeed her baby.
D. Yes, this mother can safely breastfeed her infant.

Rationale:
While low levels of opioids can be detected in the breast milk of mothers who are receiving maintenance therapy, they are safe levels for the baby to consume and will not cause respiratory depression. This mother has been stable in therapy and had negative serologies at the beginning of her pregnancy; therefore, there is no infectious contraindication to breastfeeding.

5. You are using the AAP Breastfeeding Action plan to help a new mother assess how breastfeeding is going.
Which of the following is a reassuring sign regarding adequate breastfeeding?
A. The infant feeds at least 8-12 times in a 24-hour period.
B. The infant starts to feed and then falls asleep quickly at the breast
C. The infant sleeps at least four hours between most feedings.
D. The breasts feel full all the time

Rationale:
A newborn should feed at least 8-12 times in a 24 hour period, which corresponds to every 3 hours or more frequently. An infant should be awake and sucking on her fists at the beginning of a feed and should seem full and satisfied after a feed. If the infant is sleepy, counsel the mother on performing breast compressions and other techniques to arouse the baby so they can feed more actively. Once lactogenesis stage II has occurred, and the mother is past the phase of brief, initial fullness or mild engorgement, the breasts should feel noticeably softer after a feed.

6. An exclusively breastfed 5-month-old infant of a first-time mother presents to the primary care provider with increased frequency of loose stools, about 6 times per day, and more spitting up than usual. The mother reported a “stomach bug” in the family that lasted about 24 hours one week prior to evaluation. The mother notes that the infant is feeding well. In the office, the exam shows an infant who is well-appearing, smiling, and interactive. The mouth is moist and skin turgor is good. The abdominal exam is benign. The infant was noted to go from the 50th percentile in weight to the 25th percentile. The infant’s stools were guaiac negative in the office. What would be the most appropriate recommendation at this time?

A. Recommend temporary cessation of breastfeeding and feeding extensively hydrolyzed formula.
B. Referral to a pediatric gastroenterologist to consider milk protein allergy.
C. Advise the mother to eliminate all cow’s milk protein from her diet.
D. Observe over the next two weeks and recheck the weight and feeding history at that time.

Rationale:

There is insufficient clinical history to indicate a milk protein allergy in an exclusively breastfed 5-month-old baby who has been growing well. There is insufficient evidence for restricting the maternal diet as an intervention to limit reflux, stooling frequency, or potential milk protein allergy. This is probably a case of a temporary change in GI habits due to an intercurrent viral gastroenteritis, as shared by the mother. Symptoms should resolve over the subsequent few weeks. Going from 50th to 25th percentile may be concerning, but if other growth parameters are stable, and there is weight gain, the baby may be monitored without intervention. While referral to a pediatric gastroenterologist may reassure you that this is not a case of food protein-induced enterocolitis (FPIES), a delayed non-IgE mediated gut allergic reaction, it may produce more anxiety in the mother and may lead to unanticipated weaning.

7. A new family comes to your practice with maternal concerns about breastfeeding her new baby. The now 2 week old infant born at 39 weeks vaginally is nursing 8-10 times per 24 hours, having 6-8 wet diapers per day and 3-4 stools. He is above his birth weight. The baby seems satisfied between feedings, and the mother is having no nipple pain with feedings. As part of the maternal interview, you learn that mom had gestational diabetes, hypothyroidism, and PCOS. She also has a history of previous breast reduction surgery.

How should you counsel this mother about her breastfeeding experience and what to expect?

   A. You should let her know that it is very unlikely that she will make a full milk supply for her baby for the entire breastfeeding journey due to risk factors of gestational diabetes, hypothyroidism, PCOS and previous breast reduction surgery.
   B. You can reassure the mother that because the baby is over birthweight at the 2 week check there is no cause for concern.
   C. You should counsel the mother that she needs to stop breastfeeding because the medications she takes for her hypothyroidism are contraindicated for breastfeeding.
   D. You can reassure the mother that breastfeeding seems to be going well. Discuss her risk factors that may affect continued breastfeeding, so frequent and effective milk removal is important.

Rationale:

   A. This answer is incorrect because, in any one case, we are unable to predict long-term milk supply. Despite multiple risk factors for low supply, the infant is doing well at 2 weeks. Continued follow up with continued and frequent milk removal are key to future determination of milk supply.
   B. This answer is incorrect because the maternal supply may not keep up with infant's rapid growth. Continued follow up of infant's weight is important.
   C. This answer is incorrect because treatment for hypothyroidism is not contraindicated for breastfeeding mothers. Refer to LactMed.
   D. This answer is **correct**. Mothers need a lot of reassurance with breastfeeding. Reaching birthweight by 2 weeks is a good benchmark, especially with maternal risk factors. However, continued vigilance to monitor infant weight gain over time is important, as well as frequent and effective milk removal. In addition she should have regular visits with you to reassess infant weight, and to come in any time she has concerns.

8. Breastfeeding should be temporarily interrupted when:
   A. The mother has an acute respiratory virus
   B. The mother is diagnosed with mastitis

C. **The mother is undergoing tests requiring radioactive agents**
D. The infant has a febrile illness with acute gastroenteritis

Rationale:
Radioactive contrast agents require temporary cessation of breastfeeding with "pump and dump" to maintain milk supply. Acute, self-limited, or readily treatable illnesses of mother or infant are not contraindications to breastfeeding and may deprive the infant of pre-formed antibodies transmitted via the breast milk.

Systems Based Practice

1. Hospital practices have been shown to improve breastfeeding rates. Which of the following is **NOT** an evidence-based practice?
   A. Newborns should receive nothing but breast milk, unless medically indicated.
   B. Newborns should remain with their mothers throughout the hospital stay.
   C. Newborns should be placed skin-to-skin with their mothers immediately after delivery.
   D. Newborns should be fed once every three to four hours for 20 minutes.

Rationale:
Limiting supplementation and early initiation of breastfeeding help to establish mother's milk supply and facilitates both mother and newborn learning to breastfeed. Continuous rooming in provides the opportunity for mother to notice early hunger cues and to breastfeed frequently. Newborns should be fed between 8 to 12 times per 24 hours, or approximately every two to three hours. Newborns have a limited gastric capacity immediately after birth, and colostrum is consumed in small amounts in the first two to three days of life. Colostrum is more easily digestible than infant formula, so feeding more frequently than every three to four hours is preferable and may help prevent the development of suboptimal intake jaundice.

2. When should the first office visit be scheduled after a healthy newborn is discharged from the birth hospital?
   A. At 3–5 days of life
   B. At 10 days of life
   C. At 2 weeks of life
   D. At 1 month of life
   E. At 2 months of life

Rationale:
Bright Futures and the American Academy of Pediatrics periodicity schedule recommends that infants be seen for their first postnatal office visit within the third to fifth day of life, or approximately 48–72 hours post discharge from the hospital if the newborn has had a longer hospital stay.

3. Which of the following is true about breastfeeding among African American families?
   A. African Americans have higher rates of breastfeeding compared to all other races/ethnicities.
   B. **Structural racism is a barrier to breastfeeding among African American families.**
   C. Rates of breastfeeding among African American families are decreasing over time.

D. There is nothing pediatric providers can do to increase rates of breastfeeding among African American families.

Rationale:

B is the correct answer because structural racism has been codified into our institutions of customs, practice, and law manifesting itself in both material conditions (differential access to gainful employment, sound housing, and appropriate medical facilities) and in access to power (differential access to information and resources including wealth and organizational infrastructure). Structural racism continues to disproportionately impact African American families in the US. **A** is incorrect because African Americans currently have lower rates of breastfeeding compared to other races/ethnicities. As there is no genetic basis for race, these difference in health outcomes based on racial identity demonstrate the impact of racism and bias. **C** is incorrect because while the breastfeeding rates of African Americans are lower in comparison to other races/ethnicities, they have been steadily increasing over time. **D** is incorrect because there are several strategies pediatric providers can utilize to help increase the rates of breastfeeding among African American families. These include, but are not limited to, assessing and addressing their own implicit and explicit biases toward African Americans, increasing their own ability to manage common breastfeeding concerns, and becoming more aware of/referring families to community-based local, state/territorial, and national organizations working to address these disparities.

Practice Based Learning and Improvement

1. In the United States, among children born in 2019, what were the percentages of children ever breastfed, breastfed at 6 months and breastfed at 12 months respectively?

A. 80.0%, 51.4%, 29.2%
B. 83.2%, 55.8%, 35.9%
C. 80%, 50%, 26%
D. 83.2%, 45.3%, 24.9%

Rationale:

B is the correct answer. While memorizing these data is not necessary, it is important to be able to locate the most recent data and to understand trends in the breastfeeding data.
Data are available: “Breastfeeding Among U.S. Children Born 2012-2019, CDC National Immunization Survey” (link: https://www.cdc.gov/breastfeeding/data/nis_data/results.html).

2. The mother of one of your pediatric patients was seen in the emergency department yesterday and prescribed a new medication. She was advised that it would be safest to stop breastfeeding her 3-month infant during the next ten days while she is taking the medication. She calls your office and mentions that her breasts feel engorged and wonders whether she needs to wait another nine days before resuming breastfeeding. Your best advice would be:

A. Wait the full ten days to resume breastfeeding, but consider pumping for comfort.
B. Stop taking the medication so she can restart breastfeeding.
C. Advise the mother to return to the emergency department to inquire whether another medication can be prescribed.
D. Find out what medication was prescribed and consult an evidence-based resource to find out whether she needs to abstain from breastfeeding.

Rationale:
D. It is important to know what the specific medication is and why it was prescribed. Most maternal medications are compatible with breastfeeding, but not all health care providers research in resources which provide the best information regarding medication use during lactation. LactMed is a good resource. **A.** Whenever breastfeeding is interrupted, the mother should be advised to use a good quality breast pump, or hand express, to remove milk according to the infant's feeding schedule. Pumping just to comfort will not maintain the milk supply. **C.** Use of the emergency department for resolving the medication issue is not a good use of resources and is not cost-effective. **B.** Stopping the medication without fully understanding the clinical situation may place the mother's health at risk. Office practices, triage nurses, and health care providers should have reliable sources to consult regarding the potential adverse effects to the infant when a mother is prescribed medication. The amount of drug that reaches the infant is impacted by the pharmacokinetics, the dose, the preparation, and the age of the infant. When in doubt, look up the medication.

Interpersonal and Communication Skills

1. A couple brings their new baby to the primary care office for the initial well child check. At the start of the visit, the non-birthing parent identifies herself as the mother, and the birthing parent identifies himself as the father. As a first-time parent, he is asking for help with chestfeeding. During the encounter, the provider mistakenly refers to the father's lactating organ as his "breast." The best course of action for the provider to take in this instance is to:
   A. Deflect the mistake by saying "I'm just so used to helping women with breastfeeding, I'm not used to any other way."
   B. Attempt to align themself with the father by saying "You know, I have a friend who is trans."
   C. Apologize profusely and make a point of how embarrassed they are to have made a mistake.
   D. Make a sincere apology and continue with the patient encounter.

Rationale:
Answer **D** is the best response. It is important to acknowledge that everyone makes mistakes. Options A and B, deflecting the mistake or attempting to align with the parent, does not provide an apology. An overly-profuse apology risks making the moment about the person who made the mistake, rather than keeping the encounter focused on the patient/family. Of these options, the best course of action is to simply and sincerely apologize and then continue with the encounter.

2. You are doing a prenatal visit with a pregnant patient at 24 weeks gestation, and she is unsure if she wants to breastfeed her baby or not. Among the following, which would be your best response?
   A. Tell her all the benefits to baby and to her own health as reasons that she should breastfeed.
   B. Explain that the American Academy of Pediatrics recommends that all mothers breastfeed their babies exclusively for about 6 months and up to 2 years and beyond.

C. **Ask her what she has heard about breastfeeding, acknowledge her concerns, and educate her after validating her concerns with empathy and understanding.**
D. Explain all of the dangers of infant formula to her so she will change her mind.

Rationale:

A. This answer is incorrect if it was your only response to her, as we know that scientific evidence does not often sway health choices alone. It would be fine to use this information in your education part of motivational interviewing.
B. This answer is incorrect, although true, because we are trying to find out this mom's concerns and beliefs about breastfeeding before we educate her with facts and recommendations.
C. This answer is **correct** because motivational interviewing requires us to listen to the patient with open-ended questions, validate their concerns, and then educate them. It is also important to ask if it is OK for you to tell them some educational information.
D. Incorrect. Scaring families into making health decisions is not an acceptable way of changing health behaviors.

3. Which strategy demonstrates therapeutic communication when offering breastfeeding counseling to a mother diagnosed with an opioid use disorder?

A. Dwelling on past negative experiences or maternal behaviors
B. Disregard of the mother's efforts and successes
C. **Considering the mother's breastfeeding perspectives and needs**
D. Using closed ended questions during the patient interview

Rationale:

C is correct because consideration for the mother's perspectives and needs increases care provider empathy and optimizes the provision of breastfeeding support. Use of reflective questions, rather than labeling their experiences, can encourage open communication. **A** is incorrect because dwelling on the past may impede the mother-care provider relationship and discourage trust and open communication. **B** is incorrect because disregard for the mother's efforts and success may discourage breastfeeding and increase distress. It is important to offer praise and reinforce the positive behaviors, as well as the relationship between the infant and mother. **D** is incorrect because close ended questions are not considered to be a therapeutic strategy. Open-ended questions encourage patients to discuss their concerns.